Docket No. AB-131U1

Amendments to the Specification

- Please replace paragraph [0001] with the following amended paragraph:

[0001] The present application is a Divisional of U.S. Application Serial Number 09/823,271, filed 03/30/2001, now issued as U.S. Patent Number 6,826,430; which claims the benefit of U.S. Provisional Application Serial No. 60/193,647, filed 03/31/2000; and U.S. Provisional Application Serial No. 60/203,707, filed 05/11/2000, which applications and patent are incorporated herein by reference.

- Please replace paragraph [0029] with the following amended paragraph:

[0029] The following patents ~~or pending patent applications~~ disclose information relevant to the design, use and operation of a fully implantable cochlear stimulation system: United States Patent Number 5,603,726; United States Patent Number 6,002,966; United States Patent Application Number 09/407,826, filed 9/28/1999, now issued as U.S. Patent Number 6,272,382; United States Patent Application Number 09/322,712, filed 5/28/1999, now issued as U.S. Patent Number 6,289,247; which patents ~~and patent applications~~ are incorporated herein by reference.

- Please replace paragraph [0038] with the following amended paragraph:

[0038] A four output cross-point switch 7 allows the selection of any four of the available taps to be routed to any output. A full cross-point switch is preferred for the purposes of adjusting to patient pathology, correcting electrode position, and allowing drivers to be interspersed along the array to reconfigure for partial device failures and produce arbitrary longitudinal bipolar drive configurations. Four outputs are selected because of the ability to implement a practical electrode connector with five contacts. Such a contact may be substantially as described in United States Patent Application Number 09/455,048, filed 12/6/1999, now issued as U.S. Patent Number 6,321,126, incorporated herein by reference. Additionally, with only five contacts, the number of wires is reduced over what has previously

been required, and this also allows the wire gauge to be increased, all of which has reliability and surgical implications. Additionally, while some might be concerned that having only four simultaneous stimulation sites is a limitation, it is believed that four simultaneous stimulation sites may in reality be close to the maximum number of channels that can be used while still avoiding excessive interaction. Nonetheless, as the connector and electrode technology evolves, the number of simultaneous electrodes may be increased, if such proves to be beneficial. The major disadvantage of providing only four simultaneous drives is the resulting limitation on only being able to drive two true longitudinal bipolar channels simultaneously. Such may or may not be an issue depending upon whether radial stimulation modes are more efficacious for a majority of patients.

- Please replace paragraph [0056] with the following amended paragraph:

[0056] Stimulation groups are then coded into a pulse table, similar to that described in U.S. Patent 6,002,966, or U.S. patent application, Serial No. 09/322,712, now issued as U.S. Patent Number 6,289,247, previously referenced. Contacts within stimulation groups are then fit to the patient's dynamic range using objective and behavioral means for a given or optimum pulse-width. From these measures, a target compliance voltage is derived based upon what is expected to be the optimum stimulation rate. (The narrower the pulse widths, the higher the rate, and the higher the compliance voltage.) In order to minimize power dissipation, it is preferred that all contacts be set as close a possible to the target compliance voltage for their respective maximum stimulation levels. This is typically accomplished by varying pulse width. Noting that high stimulation rates and many channels may be necessary, use of the stimulation groups may be necessary. To simplify the system and the interactions, pulse widths of all the contacts within a stimulation group are kept the same. This complicates the software somewhat because it is the software that changes the pulse width and amplitude to reach the target compliance voltage, while the clinician programming the device is able to only increase (or decrease) the amplitude.

- Please replace paragraph [0067] with the following amended paragraph:

[0067] As described above, it is seen that additional complexity has been included in the prosthesis system in order to allow more than sixteen channels and in order to have a connector disconnect. A simplified version of the system can be made by moving the active electrode electronics into the hermetic space of the sealed housing 100 (FIG. 1), and then providing [[an]] a hermetic feed-through for each electrode contact. Additional simplification may be realized by adding a capacitor in series with each contact, thereby eliminating the need for current balancing electronics.